Course Requirements

❑ Undergraduate

◦ Graduation Credits

▪ Students who entered in 2006 or after : at least 134 credits and 1AU

- GPA of all completed subjects must be 2.0/4.3 or better

※ Students who entered in before 2006 : at least 144 credits.

◦ General Course Requirements : at least 24 credits and 1AU(Students who entered in 2006 or after. Students who entered in before 2006 : Refer to completion requirements by student numbers)

▪ Mandatory General Courses : 12credits and 1AU

① English(8credits)

- Listening and Pronunciation Ⅳ(1credits), Conversation Ⅳ(1credits), Reading Ⅳ(1credits), Writing Ⅳ (1credits), Listening and Pronunciation Ⅴ(1credits), Conversation and Presentation Ⅴ(1credits), Reading Ⅴ(1credits), Writing Ⅴ(1credits)
- Credit recognition standard is to absolve the duty of taking class through authorized test (TEPS/TOEFL/IELTS) and give the score as "S"

Classification	Exemption list of English course		English Score	Remark
	Course Name (Course No.)	Credit		
Advanced	Reading (COM407)	1	TOEFL iBT Reading 25 TOEIC RC 450	
	Writing (COM408)	1	TOEFL (PBT/CBT) 6.0 LOEP 6/6 or 8/8 TOEFL iBT Writing 25	
	Listening (COM405)	1	TOEFL iBT Listening 25 TOEIC LC 450	
	Conversation/Presentation (COM406)	1	Phone Pass-Overall 70 TOEFL iBT Speaking 25	
High Intermediate	Reading (COM403)	1	TOEFL iBT Reading 22 TOEIC RC 400	
	Writing (COM404)	1	TOEFL (PBT/CBT) 5.0 LOEP 5/6 or 7/8 TOEFL iBT Writing 22	
	Listening (COM401)	1	TOEFL iBT Listening 22 TOEIC LC 400	
	Conversation (COM402)	1	Phone Pass-Overall 60/ TOEFL iBT Speaking 22	

② The Art of Technical Writing(1credits)

※ For foreign student, substitution is possible when Korean Language I is 3.0/4.3 or more

③ Colloquium(1credits)

※ For foreign student, substitution is possible when Korean Language Ⅱ is 3.0/4.3 or more

④ University Hour : 0credits

- University hour is held to provide students not only with sufficient major related knowledge but also with wholesome general education. It is required but with non-credit, and students must attend 80% or more during the two semester period.

※ For foreign student, can be substituted by Korean Culture and History

⑤ Physical Education(2credits)

⑥ Ethics and Safety II(1AU)

- Sub Courses: Research Ethics /Lab Safety /Sexual Education /Leadership
- Exam Period: Beginning of each semester ~ the end of Final Exam period (No limit to the number of exams students can take during the exam period)
- Exam procedure

KAIST Portal	→	Login	→	Listen to the lecture	→	Take the exam	→	Confirm the exam score	→	Print out the result

- Grade : “S” will be given as the passing grade.
  Students must receive 60 (2010:70, After 2011:80) or above to pass each of these courses-- Research Ethics /Lab Safety /Sexual Education /Leadership.(“S “ grade will be given). Grades will be recorded automatically on students’ transcript at the end of each semester.
- All students must pass the above courses in order to graduate (to receive their degree).

▪ Elective Basic Course: 12 credits

◦ Interdisciplinary Course Requirements : at least 12 credits.

- If students completed business related courses at KAIST (including business related courses (recognized at KAIST) taken at other universities), credits for the courses will be awarded as interdisciplinary course credits; however, credits will not be granted for courses which are similar to or the same as the courses previously taken.

◦ Common courses Requirements: at least 33 credits.(Students who entered in 2006 or after. Students who entered in before 2006 : Refer to completion requirements by student numbers)

▪ Mandatory Basic Courses: at least 30 credits.
▪ Elective Common Course : at least 3 credits.

◦ Major Course Requirements : at least 65 credits.

▪ Mandatory Major Courses : ECE - 47 credits, CSE - 44 credits.
  - CSE : Programming Fundamentals Ⅰ(JAVA), Programming Fundamentals Ⅱ(C, C++), Data Structures, Software Studio, Computer Architecture, Signal and System, Circuit Theory, Digital Logic Design+Lab, Programming Languages and Lab, Algorithm Design & Analysis, Operating Systems, ISUP A, ISUP B, UP, Internship
  - ECE : Programming Fundamentals Ⅰ(JAVA), Programming Fundamentals Ⅱ(C, C++), Data Structures, Software Studio, Computer Architecture, Signal and System, Circuit Theory, Digital Logic Design+Lab, Electromagnetics, Introduction to Telecommunication System, Electrornic Circuit (I)+Lab, Digital Filtering, ISUP A, ISUP B, UP, Internship
▪ Elective Major Courses : ECE - 18 credits, CSE - 21 credits

※ For those who entered after 2006, maximum of 9 credits will be accepted as elective credits offered by other (CSE/ECE) majors in Engineering School.

※ Major elective courses taken as a exchange students in other domestic universities or as an international exchange student will be transferred as main major elective credits.

◦ Research credit : at least 8 credits

▪ Take 8 credits form one of these courses : ISUP A(2), ISUP B(2), UP(4), and Internship
  Ex.) ISUP A(2), ISUP B(2), UP(4), Internship or ISUP A(2), ISUP B(2) or UP(4)

※ Before 2005 : Take 12 credits form these courses :SUP A(3), ISUP B(3), UP(6), Internship

◦ English Language Requirements for Graduation(☞ Students who entered in and after 2005)

- IBT TOEFL score: at least 88 or TOEIC score : at least 840 or TEPS score : at least 743 or IELTS score : at least 6.5
- IBT TOEFL score: at least 79 or TOEIC score : at least 800 or TEPS score : at least 695 or IELTS score : at least 6.0 & more than 3.0 of English subject G.P.A.

◦ Requirements for Minor and Double major

- Requirements for a minor in ICE
  - Minor major will be honored if a students completes 21 credits or more in Minor major courses classified by each department with GPA of 2.0 or above.

※ The same courses will be honored as Majors as well as Minor majors (up to 9 credits).

※ Foe students graduating with 144 credits, up to 9 credits will be honored as Elective majors.

- Requirements for a double major
  - Double major will be honored if a student completes 42 credits or more in Double major subjects classified by each department with GPA of 2.0 or above.

※ The same subjects will be granted as Majors as well as Double majors subjects (up to 9 credits).

◦ Miscellaneous

- Refer to each completion requirements, since the completion requirements of general and common courses are different according to entering year.
  - Enterer of each year can choose conditions for graduation. If one entered before 2005 and graduating with enterers after 2006, one can choose either the course of entering or 2006 course.
    ex) Enterer of 2003 year can choose among the conditions of 2003, 2004, 2005, 2006
  - When the enterer of each year choose the graduation condition of after the year of his enter year, completed credit for general course can be applied by the course requirement credit of the entering time.
- If enterer of before 2003 year take 'Engineering Mathematics Ⅰ Ⅱ', it can be recognized as mandatory basic or elective major.
- Course related facts are based on entering year except for specially appointed things. If the course was ended or changed, one must take substitute course.
- If there's extra case other than manual or guideline concerning course completion, follow the policy of the department first. In case of objection or mediation, it can be decided through deliberation of related committee.
- If there's change on school register due to change of major, completed classification can be recognized the same on different course number but same title subject.
  ex) In case a student of Informations and Communications Engineering change his major to IT Business department, ICE0103 Probability and Statistics (Mandatory common) can be recognized as taking BAT 103 Probability and Statistics (Mandatory common)

* Note
Student must check every requirement for graduation (course completion requirements, etc.) on his own head.

General Course - Completion Requirements by student number & Substitute Course

1. Completion requirements by student numbers

Student No.	Requirements
2004 ~	◦ Mandatory Basic Course: 12 credits and 1AU - Listening and Pronunciation Ⅳ(1), Conversation Ⅳ(1), Reading Ⅳ(1), Writing Ⅳ(1), Listening and Pronunciation Ⅴ(1), Conversation and Presentation Ⅴ(1), Reading Ⅴ(1), Writing Ⅴ(1) - The Art of Technical Writing(1) - Colloquium(1) - University Hour(0) - Physical Education(2) - Ethics and Safety II (1AU) ◦ Elective Basic Course: 12 credits
2003	◦ Mandatory Basic Course: 16 credits and 1AU - UCR Language Program(10) - Philosophy of Science(2) - Colloquium(1) - The Art of Technical Writing(1) - University Hour(0) - Physical Education(2) - Ethics and Safety II (1AU) ◦ Elective Basic Course: 8 credits
2002	◦ Mandatory Basic Course: 14 credits and 1AU - UCR Language Program(10) - Leadership(2) - University Hour(0) - Physical Education(2) - Ethics and Safety II (1AU) ◦ Elective Basic Course: 10 credits

2. Completion of substitute subject

Substitute subject for closed or changed subject

◦ COM0110 Philosophy of Science → COM0164 Science and Technology, COM0133 Western Philosophy

◦ The Art of Technical Writing in Korean → 1 course of The Art of Technical Writing, Philosophy of Science, Oriental Philosophy, Korean History, Modern World History, Introduction to Sociology, Introduction to Psychology, Introduction to Communications

◦ Art Ⅰ(Understanding Music) → Understanding Music

◦ Art Ⅱ(Understanding Arts) → Understanding Arts

◦ Physical Education Ⅰ → Physical Education Ⅰ(Golf)

◦ Physical Education Ⅱ → Physical Education Ⅱ(Swimming)

◦ Physical Education Ⅳ → Physical Education Ⅲ(Skiing)

◦ Practical Sino-Korean(COM0109) → Practical Sino-Korean(COM0140)

◦ Practical Sino-Korean(COM0140) → Classics of The East and West(COM0163)

◦ Logic → Philosophy of Science, Oriental Philosophy, Western Philosophy, Modern World History, Introduction to Sociology, Introduction to Psychology, Introduction to Communications

◦ IT Leadership → Philosophy of Science, Oriental Philosophy, Korean History, Modern World History, Introduction to Sociology, Introduction to Psychology, Intoduction to Communications

◦ Understanding Philosophy → more than 1 credit of Philosophy of Science, Oriental Philosophy, Western Philosophy and other liberal course

◦ UCR Language Program 10 Credits → Current English subject 8 Credits

Student entered in 2002			**Student entered since 2004**
Semester	Course no.	Percentage by skills	Re-taking course
Spring, Fall (4 credit each)	COM100	DOPS(50%)	'Conversation', 'Listening/Pronunciation'
		RWTP(50%)	'Reading', 'Writing'
Summer (2 credit)	COM100	DOPS(50%)	choose one from 'Conversation' or 'Listening/Pronunciation'
		RWTP(50%)	choose one from 'Reading' or 'Writing'
Student entered in 2003			Student entered since 2004
Semester	Course no.	Percentage by skills	Re-taking course
Spring, Fall (4 credit each)	COM100	DOPS(40%)	'Conversation', 'Listening/Pronunciation'
		RWTP(40%)	'Reading', 'Writing'
		LAB(20%)	'Listening/Pronunciation'
Summer (2 credit)	COM100	DOPS(40%)	choose one from'Conversation' or 'Listening/Pronunciation'
		RWTP(40%)	choose one from 'Reading' or 'Writing'
		LAB(20%)	'Listening/Pronunciation'
- DOPS=Discussion and Oral Presentation Skills - RWTP=Reading and Writing for Technical Purposes			

Common Course - Completion Requirements by student number & Substitute Course

1. Completion requirements by student numbers

Student No.	Requirements
2006~	◦ Mandatory Common : Must complete total 30 credits <Mathematics Fundamentals> ICE100 Calculus Ⅰ(3), ICE114 Calculus Ⅱ(3), ICE101 Discrete Math(3), ICE108 Ordinary Differential Equations(3), ICE102 Linear Algebra(3), ICE103 Probability & Statistics(3) <Science Fundamentals> ICE115 Physics I(3), ICE116 Physics II(3), ICE111 Chemistry(3), ICE112 Life Science(3) ◦ Elective Common : Take 3 credits of Common Electives ICE109 Applied Analysis(Former Engineering Mathematics II)(3), ICC201 Abstract Algebra(Former Discrete Mathematics II) (3)
2004 ~2005	◦ Mandatory Common : Must complete total 30 credits ICE100 Calculus(3), ICE102 Numerical Linear Algebra(3), ICE103 Probability and Statistics(3), ICE115 Physics(3), ICE113 Discrete Mathematics(3), ICE120 Introduction to Computer Science(3), ICE124 Programming Fundamentals I-JAVA(3), ICE125 Programming Fundamentals II-C,C++(3), ICE130 Introduction to Electrical Engineering(3), ICE108 Engineering Mathematics I(3) ◦ Elective Common : Take 6 credits of Common Electives ICE109 Engineering Mathematics II(3), ICE111 Chemistry(3), ICE112 Life Science(3), ICE116 Physics II(3)
2002~2003	◦ Mandatory Common : Must complete total 27 credits ICE100 Calculus(3), ICE102 Numerical Linear Algebra(3), ICE103 Probability and Statistics(3), ICE110 Physics(3), ICE101 Discrete Mathematics(3), ICE120 Introduction to Computer Science(3), ICE123 Programming Fundamentals I I-JAVA(3), ICE121 Programming Fundamentals I-C(3), ICE130 Introduction to Electrical Engineering(3) ◦ Elective Common : Take 3 credits of Common Electives ICE111 Chemistry(3), ICE112 Life Science(3)

2. Substitute course

◦ ICE100 University Mathematics → ICE100 Calculus
◦ ICE108 Engineering Mathematics I → ICE107 Differential Equation
◦ ICE201 Discrete Mathematics → ICE101 Discrete Mathematics
◦ ICE101 Discrete Mathematics → ICE113 Discrete Mathematics Ⅰ
◦ ICE106 Programming Languages(JAVA) → ICE123 Programming Fundamentals Ⅱ
◦ ICE123 Programming Fundamentals Ⅱ → ICE124 Programming Fundamentals Ⅰ(JAVA)
◦ ICE105 Programming Languages(C언어) → ICE121 Programming Fundamentals Ⅰ
◦ ICE121 Programming Fundamentals Ⅰ → ICE125 Programming Fundamentals Ⅱ(C,C++)
◦ ICE206 Introduction to Telecommunications → ICE130 Introduction to Electrical Engineering
◦ ICE130 Introduction to Electrical Engineering → ICE114 Calculus Ⅱ
◦ ICE208 Advanced Mathematics → ICE109 Engineering Mathematics Ⅱ
◦ ICE109 Engineering Mathematics Ⅱ → ICE109 Applied Analysis
◦ ICE205 Life Science → ICE112 Life Science

Major Course - Completion Requirements by student number & Substitute Course

1. Completion requirements by student numbers

Student No.	Requirements
2006~	◦ Mandatory Major : CSE 44credits, ECE 47credits - CSE&ECE Common Mandatory Major : 26credits ICE124 Programming Fundamentals I(3), ICE125 Programming Fundamentals II(3), ICC220 Data Structure(3), ICE262 Computer Architecture(3), ICE211 Signal & Systems (3), ICE241 Circuit Theory(3), ICC202 Software Studio(4), ICE243 Digital Logic Design & Lab(4) - Research 8credits : ISUP A(2), ISUP B(2), UP(4), Internship - CSE Mandatory Major : ICC341 Programming Languages and Lab(4), ICE253 Algorithms(3), ICC225 Operating System(3) - ECE Mandatory Major : ICE244 Electromagnetics(3), ICE231 Introduction to Communication Systems(3), ICE343 Electronic Circuits&Lab(4), ICE310 Digital Filtering(3) ◦ Elective Major: CSE 21credits, ECE 18credits ※ Maximum of 9 credits will be accepted as elective credits in other majors(CSE/ECE) in the Department of Information and Communications. ◦ Interdisciplinary : 12credits ◦ Research credit : 8credits - ISUP A(2), ISUP B(2), UP(4), Internship
2004 ~2005	◦ Mandatory Major : 15credits - CSE : ICC200 Data Structure(3), ICC210 Algorithm Design & Analysis(3), ICC220 Computer Architecture(3), ICC225 Operating Systems(3), ICC341 Programming Languages(3) - ECE : ICE211 Signal and System(3), ICE231 Introduction to Telecommunication System(3), ICE241 Circuit Theory(3), ICE244 Electromagnetics(3), ICE243 Digital Logic Design+Lab(4) ◦ Elective Majors : A total of 45 credits or more including minimum of 27 credits of subjects in the same field ash Mandatory Majors (Note: at least 15 credits in 300 unit or above should be taken excluding research credits or Interdisciplinary credits) ※ Excess Credits earned as a result of completing all of the Mandatory Major courses will be accepted as major elective credits. ◦ Interdisciplinary : 12credits ◦ Research credist : 12credits - ISUP A(3), ISUP B(3), UP(6), Internship
2002~2003	◦ Mandatory Major : 15credits - CSE : ICC200 Data Structure(3), ICC210 Algorithm Design & Analysis(3), ICC220 Computer Architecture(3), ICC225 Operating Systems(3), ICC341 Programming Languages(3) - ECE : ICE211 Signal and System(3), ICE231 Introduction to Telecommunication System(3), ICE241 Circuit Theory(3), ICE244 Electromagnetics(3), ICE243 Digital Logic Design+Lab(4) ◦ Elective Major : A total of 51 credits or more including minimum of 27 credits of subjects in the same field ash Mandatory Majors (Note: at least 15 credits in 300 unit or above should be taken excluding research credits or Interdisciplinary credits) ◦ Interdisciplinary : 12credits ◦ Research credit : 12credits - ISUP A(3), ISUP B(3), UP(6), Internship

2. Substitute course

ICE254 Data Structure → ICC200 Data Structure

ICC290 Software Development → ICC291 Software DevelopmentI

ICC291 Software DevelopmentI → ICC293 Introduction to Software Engineering

ICE311 Introduction to Multimedia → ICE312 Introduction to Multimedia+Lab

❑ Course Requirements for Master's Degree and Doctor's Degree in the Department of Information and Communications.

1. Master's Program

A. Graduation Credits : at least 46 credits and 1AU

B. Mandatory Common : 1credits(COM505,COM506 Thesis Writing Skills)

C. Major Course Requirements : at least 18 credits.

D. Interdisciplinary :at least 6 credits.

- Must complete IT Business course
- If students completed business related courses at KAIST (including business related courses (recognized at KAIST) taken at other universities), credits for the courses will be awarded as interdisciplinary course credits; however, credits will not be granted for courses which are similar to or the same as the courses previously taken.

E. Research : at least 21 credits.

- Internship 6 credits, Thesis research credit 15 credits
- Among Thesis research credit, up to 9 credits can be substituted in major course.

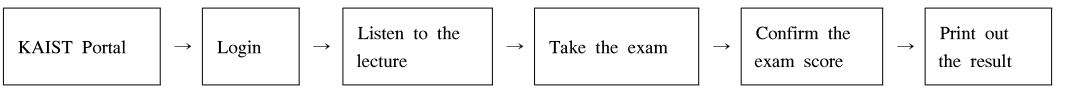
F. English Language Requirements for Graduation(☞ Students who entered in and after 2006)

◦ One of the following should be satisfied

- IBT TOEFL score: at least 88 or TOEIC score : at least 840 or TEPS score : at least 743 or IELTS score : at least 6.5
- IBT TOEFL score: at least 79 or TOEIC score : at least 800 or TEPS score : at least 695 or IELTS score : at least 6.0 & if he/she published one more paper at international conference than basically required by each major department.

G. Ethics and Safety I (1AU)

- Sub Courses: Research Ethics /Lab Safety /Sexual Education /Leadership
- Exam Period: Beginning of each semester ~ the end of Final Exam period (No limit to the number of exams students can take during the exam period)
- Exam procedure



- Grade : "S" will be given as the passing grade.
  Students must receive 60 (2010:70, After 2011:80) or above to pass each of these courses-- Research Ethics /Lab Safety /Sexual Education /Leadership.("S " grade will be given). Grades will be recorded automatically on students' transcript at the end of each semester.
- Students must complete and pass the courses by the end of the first semester of their enrollment.(Current graduate students must pass by the end of 2009 Spring Semester.)

2. Doctoral Program

A. Graduation Credits : at least 70 credits and 1AU

B. Mandatory Common : 1credit(COM505,COM506 Thesis Writing Skills)

C. Major Course Requirements : at least 30 credits.

D. Interdisciplinary : at least 9 credits.

- Must complete IT Business course
- If students completed business related courses at KAIST (including business related courses (recognized at KAIST) taken at other universities), credits for the courses will be awarded as interdisciplinary course credits; however, credits will not be granted for courses which are similar to or the same as the courses previously taken.

E. Research : at least 30 credits.
- Internship 6credits, Thesis research credit 24credits
- Among Thesis research credit, up to 12 credits can be substituted in major course.

F. English Language Requirements for Graduation(☞ Students who entered in and after 2006)
◦ One of the following should be satisfied
- IBT TOEFL score: at least 88 or TOEIC score : at least 840 or TEPS score : at least 743 or IELTS score : at least 6.5
- IBT TOEFL score: at least 79 or TOEIC score : at least 800 or TEPS score : at least 695 or IELTS score : at least 6.0 & if he/she published one more paper in a SCI/SSCI-rank journal than basically required by each major department

G. Ethics and Safety I (1AU)
- Sub Courses: Research Ethics /Lab Safety /Sexual Education /Leadership
- Exam Period: Beginning of each semester ~ the end of Final Exam period (No limit to the number of exams students can take during the exam period)
- Exam procedure

KAIST Portal → Login → Listen to the lecture → Take the exam → Confirm the exam score → Print out the result

- Grade : "S" will be given as the passing grade.
Students must receive 60 (2010:70, After 2011:80) or above to pass each of these courses-- Research Ethics /Lab Safety /Sexual Education /Leadership.("S " grade will be given). Grades will be recorded automatically on students' transcript at the end of each semester.
- Students must complete and pass the courses by the end of the first semester of their enrollment.(Current graduate students must pass by the end of 2009 Spring Semester.)

3. Progress arrangement
- This shall be effective from the student who entered Fall semester, 2006
- English Thesis Writing shall be effective from the student entered 2005 year
- In case of student entered before 2006, he/she can choose graduation requirements of after 2006.

4. Requirement for student who entered before 2006

Program	Requirements
Master's Program	A. Graduation Credits : at least 45 credits and 1AU B. Major Course : at least 24 credits. C. Interdisciplinary Course : at least 9 credits. D. Research Course : at least 12 credits. - Internship 6 credits, Thesis research credit 6 credits E. English Language ◦ One of the following should be satisfied - IBT TOEFL score: at least 79 or TOEIC score : at least 800 or TEPS score : at least 695 or IELTS score : at least 6.0 F. Ethics and Safety I (1AU)
Doctoral Program	A. Graduation Credits : at least 69 credits and 1AU B. Major Course : at least 42 credits. C. Interdisciplinary Course : at least 9 credits. D. Research Course : at least 18 credits. - Internship 6 credits, Thesis research credit 12 credits E. English Language ◦ One of the following should be satisfied - IBT TOEFL score: at least 88 or TOEIC score : at least 840 or TEPS score : at least 743 or IELTS score : at least 6.5 - IBT TOEFL score: at least 79 or TOEIC score : at least 800 or TEPS score : at least 695 or IELTS score : at least 6.0 & if he/she published one more paper in a SCI/SSCI-rank journal than basically required by each major department F. Ethics and Safety I (1AU)